AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-48 (Canceled).

49. (New) A measuring device for investigating particles which are suspended in a carrier liquid, comprising:

a) at least two measuring electrodes for carrying out an electrical measuring of the particles; and

b) a trapping element for fixing the particles for the electrical measuring, wherein the trapping element is a field cage comprising a plurality of cage electrodes.

50. (New) The measuring device according to claim 49, wherein at least one of the cage electrodes is also a measuring electrode.

51. (New) The measuring device according to claim 49, wherein an electrical trapping signal for fixing the particles is present at the cage electrodes, and an electrical measuring signal is present at the measuring electrodes.

52. (New) The measuring device according to claim 51, wherein a frequency of the trapping signal is different from a frequency of the measuring signal.

53. (New) The measuring device according to claim 52, wherein the trapping signal is present before the measuring signal.

54. (New) The measuring device according to claim 52, wherein the trapping signal is present during the measuring signal.

55. (New) The measuring device according to claim 52, wherein the trapping signal is present after the measuring signal.

56. (New) The measuring device according to claim 49, wherein the field cage comprises a plurality of cage electrodes, wherein the measuring electrodes are galvanically separated from the cage electrodes and can be selected independently of each other.

57. (New) The measuring device according to claim 49, wherein the measuring electrodes comprise at least two electrodes for supplying current, and at least two electrodes for measuring a voltage.

58. (New) The measuring device according to claim 49, wherein the measuring electrodes comprise two electrodes for both supplying current and measuring a voltage.

59. (New) The measuring device according to claim 49, wherein the measuring electrodes comprise two electrodes for supplying current and a third electrode that uses any one of the other measuring electrodes or remaining cage electrodes as a reference electrode for measuring voltage.

60. (New) The measuring device according to claim 49, wherein the measuring electrodes comprise two electrodes for supplying current and two electrodes for measuring voltage.

61. (New) The measuring device according to claim 49, wherein the measuring electrodes comprise at least two electrodes for supplying current.

62. (New) The measuring device according to claim 49, wherein the measuring electrodes comprise at least two electrodes for measuring voltages.

63. (New) The measuring device according to claim 59, wherein the electrodes used for measuring the voltage are arranged in relation to the cage electrodes such that the voltage between the electrodes used for measuring the voltage is not influenced or minimally influenced by a trapping signal present at the cage electrodes.

64. (New) The measuring device according to claim 57, wherein the cage electrodes are driven in pairs in phase opposition, wherein at least one of the measuring electrodes is arranged in a plane which extends between two of the cage electrodes, which are driven in phase opposition.

65. (New) The measuring device according to claim 49, wherein the measuring electrodes are arranged in a measuring plane.

66. (New) The measuring device according to claim 65, wherein the measuring plane of the measuring electrodes is essentially aligned at an angle in relation to a direction of flow of the carrier liquid.

67. (New) The measuring device according to claim 65, wherein the measuring plane of the measuring electrodes is aligned essentially parallel in relation to a direction of flow of the carrier liquid.

68. (New) The measuring device according to claim 49, wherein a current path extends between a pair of said measuring electrodes and a voltage measuring path extends between another pair of said measuring electrodes, wherein the voltage measuring path extends across the current path.

69. (New) The measuring device according to claim 68, wherein the current path and the voltage measuring path essentially extend through the field cage.

70. (New) The measuring device according to claim 49, wherein said electrical measuring comprises an impedance measuring.

71. (New) The measuring device according to claim 70, wherein said electrical measuring comprises impedance measurements at a plurality of frequencies.

72. (New) The measuring device according to claim 70, wherein said electrical measuring comprises an impedance spectroscopy measuring.

73. (New) The measuring device according to claim 49, wherein said electrical measuring comprises an impedance tomography measuring.

74. (New) The measuring device according to claim 49, wherein the field cage is a dielectrophoretic field cage.

75. (New) The measuring device according to claim 49, wherein the field cage is an electrophoretic field cage.

76. (New) The measuring device according to claim 49, wherein the field cage comprises eight cage electrodes arranged at corner points of a right parallel epiped.

77. (New) The measuring device according to claim 76, wherein the right parallel epiped comprises a substantially horizontal bottom base area, wherein the cage electrodes form the measuring electrodes at the four corner points of this base area.

78. (New) The measuring device according to claim 49, wherein the field cage comprises five cage electrodes, one each at each corner point of a pyramid.

79. (New) The measuring device according to claim 78, wherein the pyramid comprises a bottom base area, wherein the cage electrodes form the measuring electrodes at the four corner points of this base area.

80. (New) The measuring device according to claim 49, wherein the cage electrodes are connected to a control circuit which selects the cage electrodes with the trapping signal.

81. (New) The measuring device according to claim 49, wherein the measuring electrodes are connected to a measuring circuit.

82. (New) The measuring device according to claim 80, wherein the measuring electrodes are connected to a measuring circuit and the cage electrodes are connected to the measuring circuit and to the control circuit by way of a controllable switchboard section, wherein the switchboard section alternately connects the measuring circuit to the measuring electrodes or connects the control circuit to the cage electrodes.

83. (New) The measuring device according to claim 49, wherein

a) said carrier liquid flows within a channel comprising walls;

b) said walls of said channel comprise electrically insulating inner layers and outer layers;

c) at least one of said inner layers comprises an opening at a place of measurement;

d) at least one of said measuring electrodes is retracted between said inner layers and said outer layers, so that edges of the measuring electrodes are exposed to the carrier liquid flowing within said channel.

84. (New) The measuring device according to claim 83, wherein said opening has a circular shape.

85. (New) The measuring device according to claim 83, wherein said electrode for supplying current has a semi-circular shape.

86. (New) The measuring device according to claim 83, wherein said electrode for supplying current is split into a plurality of sections.

87. (New) The measuring device according to claim 86, wherein said sections of said electrode for supplying current do not protrude into said opening within said inner layer.

88. (New) A microfluidic system comprising a measuring device according to claim 49.

89. (New) A cell sorter comprising a microfluidic system according to claim 88.

90. (New) A measuring method for investigating particles suspended in a carrier liquid, comprising the following steps:

a) carrying out an electrical measuring process on at least one particle using at least two measuring electrodes;

b) fixing the particle in a trapping element for the measuring process, wherein said trapping element is a field cage comprising a plurality of cage electrodes, wherein the plurality of cage electrodes form measuring electrodes;

c) supplying a measuring current by way of at least two of the measuring electrodes; and

d) measuring a measuring voltage with at least two of the measuring electrodes.

91. (New) The measuring method according to claim 90, wherein an electrical trapping signal for fixing the particles is applied to the cage electrodes, wherein a frequency of the trapping signal differs from a frequency of the measuring current.

92. (New) The measuring method according to claim 90, wherein the field cage comprises several cage electrodes, wherein the measuring electrodes are selected separately and independently of the cage electrodes.

93. (New) The measuring method according to claim 90, wherein the cage electrodes are driven in pairs in phase opposition.

94. (New) The measuring method according to claim 90, wherein electrical measuring comprises impedance measuring.

95. (New) The measuring method according to claim 94, wherein electrical measuring comprises impedance spectroscopy.

96. (New) The measuring method according to claim 94, wherein electrical measuring comprises tomography measuring.

97. (New) The measuring method according to claim 90, further comprising the following steps:

carrying out reference measuring; and

comparing a result of reference measuring with a result of electrical measuring of the particle.

98. (New) The measuring method according to claim 97, wherein reference measuring is carried out with an empty field cage.